

Fig. 1c

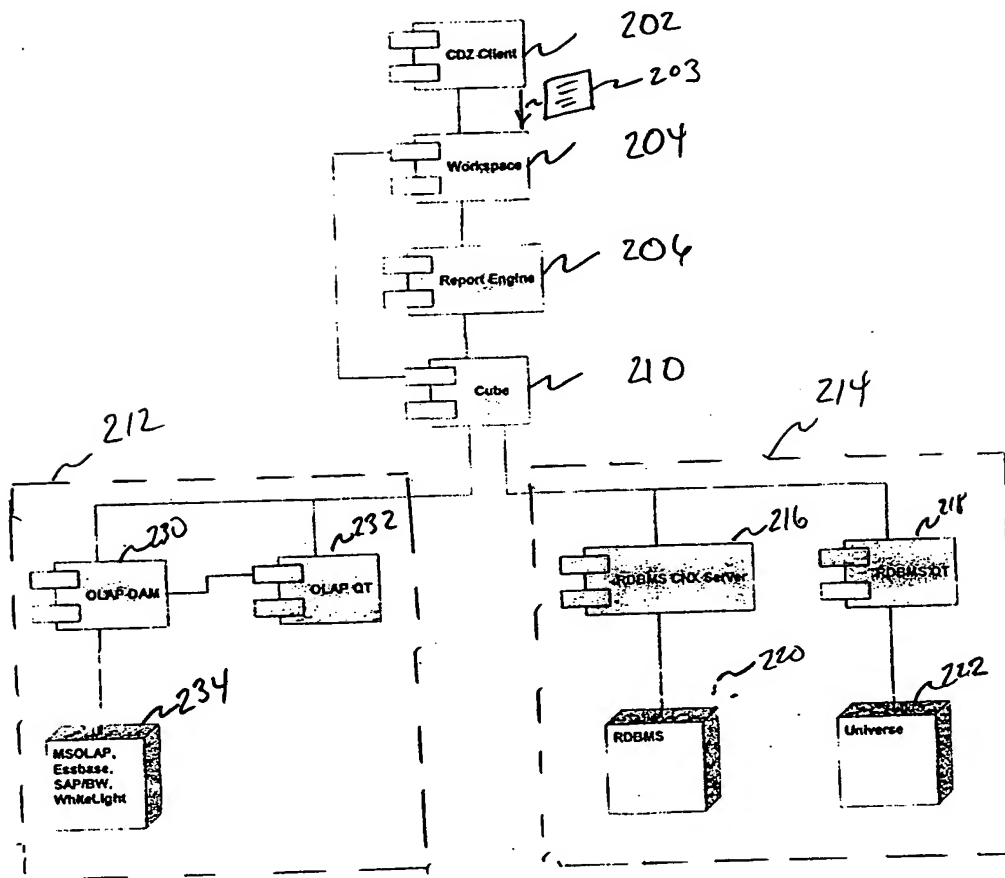


FIG 2

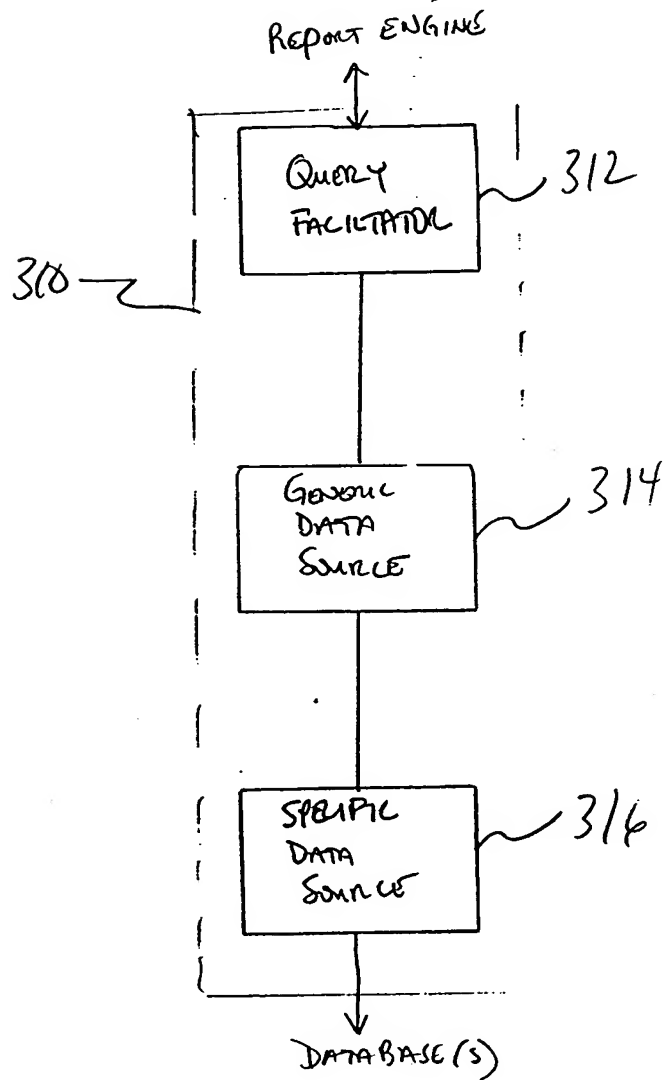


FIG 3

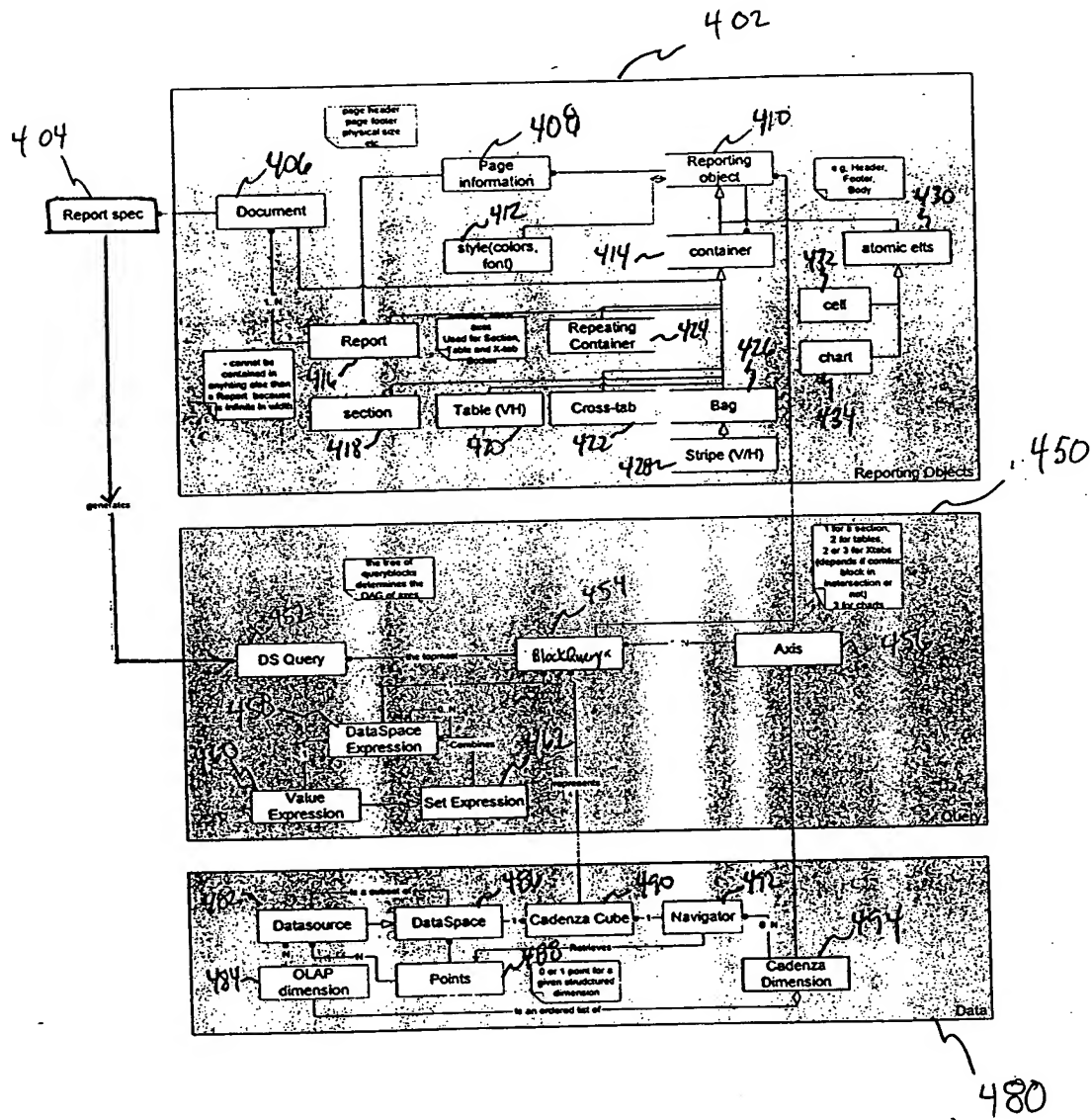


FIG 4

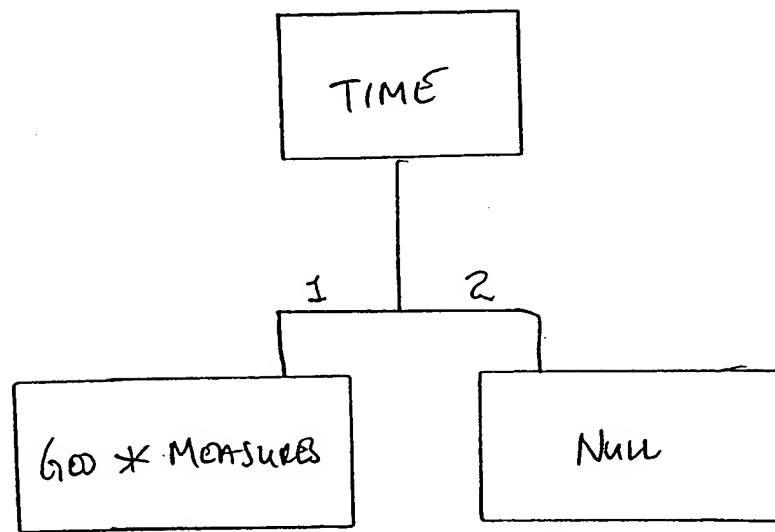


Fig 5

oup

Reporting Object	Function	Query	# of Axes	Zones	Container	Atomic
Document	<ul style="list-style-type: none"> Document can only contain Reports For all Reports in a document are based on the same data source. 	✓	0		✓	
Report	<ul style="list-style-type: none"> A Report can be contained by a Document. A Report contains a Page Header, Body, and Footer A Report has one or more pages. The Page Header and Footer are repeated on each page. 	✓	0		✓	
Section	<ul style="list-style-type: none"> Defines a band with infinite width and a specific height. A Section can be contained by a Report or another Section. 	✓	1	✓	✓	
VTable	<ul style="list-style-type: none"> Vertical Table 	✓	1	✓	✓	
HTable	<ul style="list-style-type: none"> Horizontal Table 	✓	1	✓	✓	
XTable	<ul style="list-style-type: none"> Cross Table 	✓	2	✓	✓	
Graph	<ul style="list-style-type: none"> Cannot contain other items Has two axes although certain graph types ignore second axis. 	✓	2			✓
Cell	<ul style="list-style-type: none"> Contains a measure, string, date, scalar expression (expression that returns only one value) or a picture. 		0			✓
Bag	<ul style="list-style-type: none"> Do not normally have DataSpace expression. 		0		✓	
HStripe	<ul style="list-style-type: none"> Bag where all instances of contained objects are aligned horizontally. 		0		✓	
VStripe	<ul style="list-style-type: none"> Bag where all instances of contained objects are aligned vertically. 		0		✓	

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604

606

Fig 6

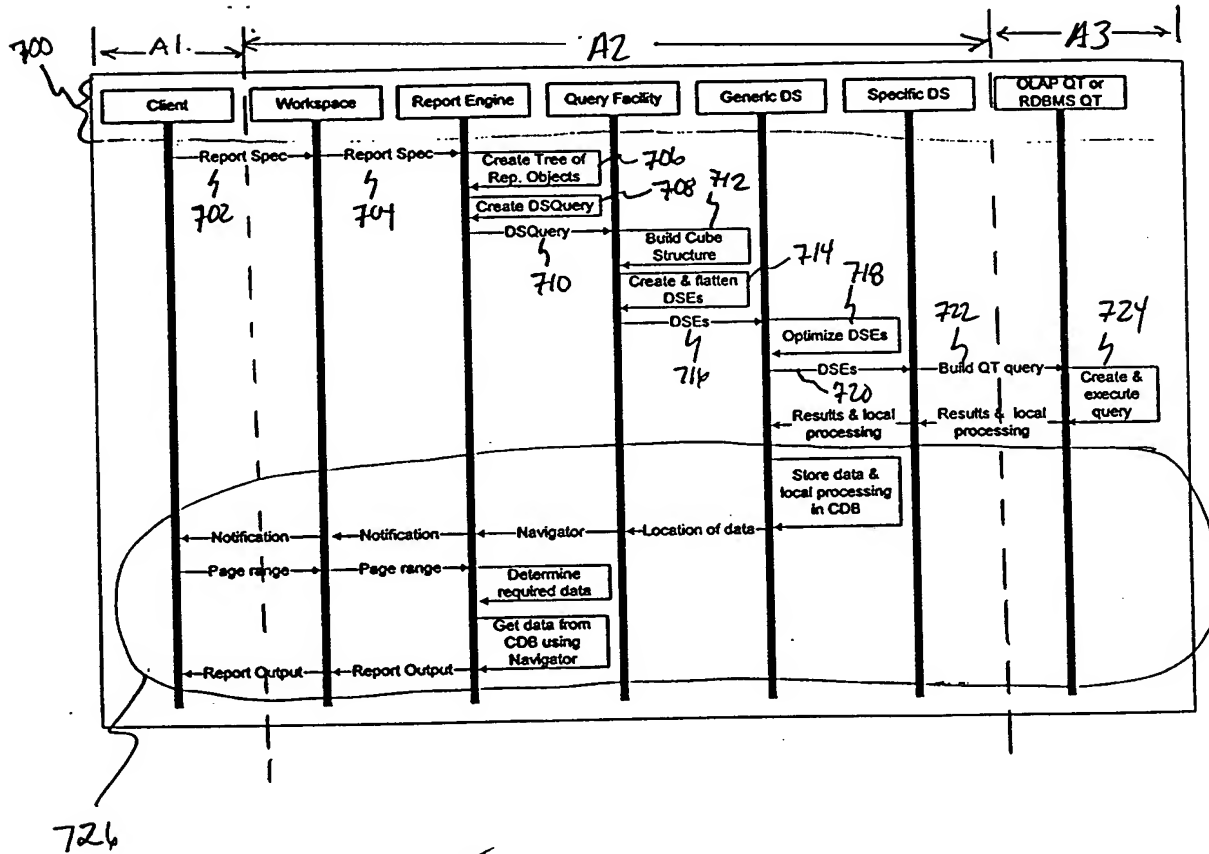


FIG 7

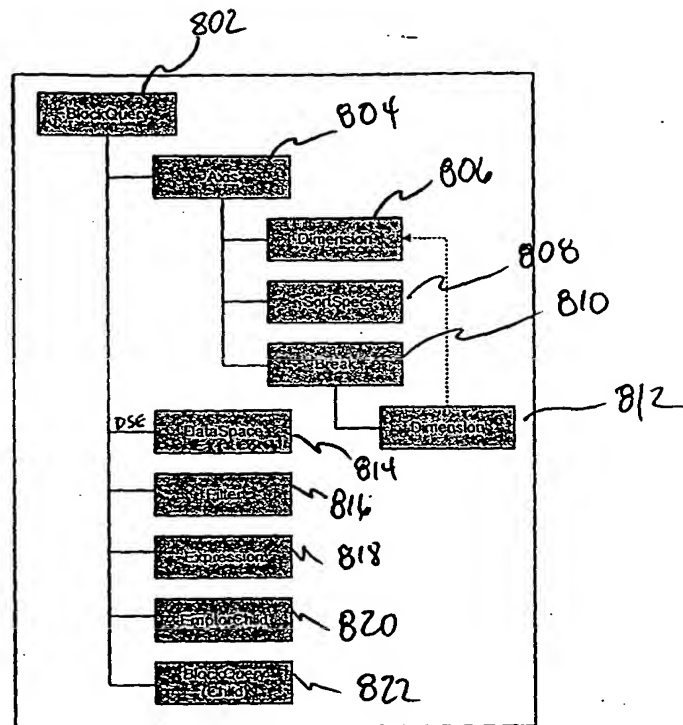


Fig 8

Customer XYZ

Time	Geography	Product	Sales/1000
1999	US	SKU200	100
1999	France	SKU200	200
1999	US	SKU300	50
1999	France	SKU300	25
2000	US	SKU200	25
2000	France	SKU200	200
2000	US	SKU300	200
2000	France	SKU300	EMPTY
			800

FIG 9.

Table:

Cell 1	Cell 2	Cell 3	Cell 4	} Header Stripe
Cell 1	Cell 2	Cell 3	Cell 4	
			Cell 4	} Footer Stripe

Fig 10

1104

Object	Axes	1108 DataSpace Expression (other than 'CurrentMember')
Document	None	None
Report	None	Customer: "XYZ"
Title Cell	None	Scalar: Customer.CurrentMember.Caption
Table	None	Time: Years.Members Geography: Country.Members Product: Products.Members
Header Stripe	None	None
Geo Header Cell	None	Scalar: 'Geography.Caption'
Time Header Cell	None	Scalar: 'Time.Caption'
Product Header Cell	None	Scalar: 'Product.Caption'
Sales Header Cell	None	Scalar: "Sales/100" (a constant)
Body	Axis 0: Time, Geography, Product	None
Body Stripe	None	None
Geo Cell	None	Scalar: Geography.CurrentMember.Caption
Time Cell	None	Scalar: Time.CurrentMember.Caption
Product Cell	None	Scalar: Product.CurrentMember.Caption
Sales Cell	None	Measures: Sales Scalar: Value/100
Footer Stripe	None	None
Footer Cell	None	Measures: Sales Scalar: Value/100

FIG 11

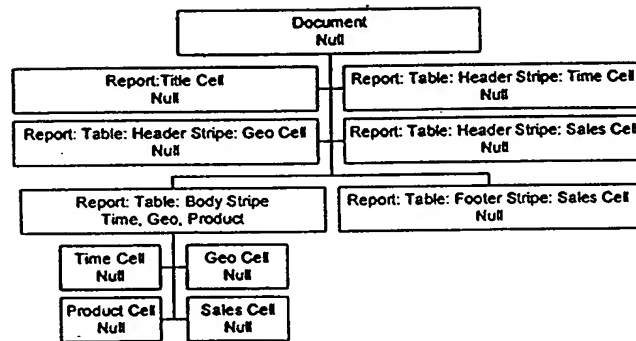


FIG 12

```

Report {
  Customer: Customer.XYZ
  Time: Time.All // default members
Product: Product.All
Geo: Geo.All
Measure: Revenue
Scalar: None
}
TitleCell {
  Customer Of report
  Time, Product, Geo, Measure: None
  Scalar = Customer_Caption
}
Table {
  Customer of Report
  Geo: Country.Members
  Time: Years.Members
  Product: Product.Members
  Measure: None
  Scalar: NonEmptyContents // a (more efficient) equivalent to: Value Of {
  Customer, Time, Product, Geo of Table
  Measure = Sales
  Scalar: Value / 100
}
}
GeoHeaderCell {
  Geo, Customer, Time, Product, Measure: None
  Scalar: Dimensions.Geo.Caption // the caption of the dimension, not of a member
}
... // same for other headers
Body { // only captures axes
  Time, Geo, Product, Customer, Measure of Table
}
Geo Cell {
  Time, Product, Customer, Measure: None
  Geo of Body
  Scalar: Geo_Caption
}
... /// idem for other caption cells
ValueCell {
  Time, Product, Customer, Geo of Body
  Measure: Sales
  Scalar: Value/100
}
  
```

Fig 13